

## Appendix E - Abbreviations and Acronyms

Å.....	Angstrom	CADR . . .	Continuous Adiabatic Demagnetization Refrigerator
ACE.....	Advanced Composition Explorer	CalDB . . .	Calibration Database
ACE.....	Attitude Control Electronics	CCAFS . . .	Cape Canaveral Air Force Station
ACIS . . .	AXAF CCD Imaging Spectrometer	CCB . . .	Common Core Booster™
ACTDP . . .	Advanced Cryocooler Technology Development Program	CCB . . .	Configuration Control Board
A/D . . .	Analog/Digital	CCD . . .	Charge-Coupled Device
ADR . . .	Adiabatic Demagnetization Refrigerator	CCSDS . . .	Consultative Committee for Space Data System
AETD . . .	Applied Engineering Technology Directorate	Cd . . . .	Cadmium
AGN . . . .	Active Galactic Nucleus	CDA . . . .	Centroid Detector Assembly
AH . . . .	Ampere-hour	CDMS . . . .	Cryogenic Dark Matter Search
AIRS . . . .	Atmospheric Infrared Sounder	CDR . . . .	Critical Design Review
Al . . . .	Aluminum	CdZnTe . . .	Cadmium Zinc Telluride
AO . . . .	Announcement of Opportunity	CEA . . . .	Center Export Administrator
AOCS . . . .	Attitude and Orbit Control System	CEASE . . . .	Compact Environmental Anomaly Sensor
arcmin . . . .	arc minutes	CETDP . . . .	Cross Enterprise Technology Development Program
arcsec . . . .	arc seconds	CFR . . . .	Code of Federal Regulations
ASCA. . . .	Advanced Satellite for Cosmology & Astrophysics	CGRO . . . .	Compton Gamma Ray Observatory
ASIC . . . .	Application-Specific Integrated Circuit	ChIPS . . . .	Chandra Imaging and Plotting System
ATD . . . .	Advanced Technology Development	CIAO . . . .	Chandra Interactive Analysis of Observations
Au . . . .	Gold	CLASS . . . .	Communications Link Analysis and Simulation System
AXAF . . . .	Advanced X-ray Astrophysics Facility	cm . . . .	centimeter
BAE . . . .	British Aerospace	COBE . . . .	Cosmic Background Explorer
BASD. . . .	Ball Aerospace Systems Division	COI . . . .	Composite Optics, Inc.
BBXRT . . . .	Broad Band X-ray Telescope	COTS . . . .	Commercial Off-the-Shelf
BGO . . . .	Bismuth Germanate	cps . . . .	counts per second
BHC . . . .	Black Hole Candidates	CPT . . . .	Comprehensive Performance Testing
BI. . . .	Back-Illuminated	CPU . . . .	Central Processing Unit
Bi. . . .	Bismuth	CRC . . . .	Cyclic Redundancy Code
B-MINE . . . .	Balloon-borne Microcalorimeter Nuclear Line Explorer	CRIS . . . .	Cosmic Ray Isotope Spectrometer
BOL. . . .	Beginning of Life	Cs. . . .	Cesium
bps . . . .	bits per second	CSOC . . . .	Chandra Science Operations Center
BPSK. . . .	Biphase Shift Keying	CSR . . . .	Center for Space Research
C . . . .	Carbon	CSS . . . .	Coarse Sun Sensor
C . . . .	Celsius	CTE . . . .	Coefficient of Thermal Expansion
C&DH . . . .	Command and Data Handling	CTI . . . .	Charge Transfer Efficiency
CADR . . . .	Continuous Adiabatic Demagnetization Refrigerator	cts. . . .	counts
		Cu . . . .	Copper

CXC	Chandra X-ray Center	FDF	Flight Dynamics Facility
CXSOC	Constellation-X Science and Operations Center	Fe	Iron
CY	Calendar Year	FEI	Frequency Electronics, Inc.
$C_z$	Critical Temperature	FI	Front Illuminated
DARPA	Defense Advanced Research Projects Agency	FITS	Flexible Image Transport System
dB	Decibel	FMA	Flight Mirror Assembly
DDF	Director's Discretionary Fund	FOT	Flight Operations Team
Dec	Declination	FOV	Field of View
DET	Direct Energy Transfer	FPC	Focal Plane Camera
DOF	Degree-of-Freedom	FPGA	Field Programmable Gate Arrays
DOORS	Dynamic Object Oriented Requirements System	FPM	Focal Plane Module
DRM	Design Reference Mission	FPPD	Flight Programs and Projects Directorate
DSN	Deep-Space Network	FRA	Focal plane Readout Array
DSRI	Danish Space Research Institute	FRR	Flight Readiness Review
DT&E	Development Test and Evaluation	FST	Facility Science Team
E	Energy	FSW	Flight Software
EAR	Export Administration Regulations	FTE	Full Time Equivalent
EDCCD	Event Driven CCD	FTS	Fiducial Transfer System
EELV	Evolved Expendable Launch Vehicle	FU	Flight Unit
EEPROM	Electronically Erasable Programmable Read-Only Memory	FUSE	Far Ultraviolet Spectroscopic Explorer
EGSE	Electrical Ground Support Equipment	FWHM	Full Width Half Maximum
ELV	Expendable Launch Vehicle	FY	Fiscal Year
EMI/EMC	Electromagnetic Interference/Compatibility	G	Gravity
EO-1	Earth Observing-1	Gbytes	Gigabytes
EOL	End of Life	Ge	Germanium
EOS	Earth Observing System	GFE	Government Furnished Equipment
E/PO	Education and Public Outreach	GLAS	Geoscience Laser Altimeter System
EPS	Electrical and Power Subsystem	GLAST	Gamma Ray Large Area Space Telescope
ESA	European Space Agency	gm	gram
ET	Environmental Testing	GO	General Observer
EU	Engineering Unit	GOES	Geostationary Operational Environmental Satellites
eV	electron Volts	PGP	Goddard Procedure Guidelines
EVD	Engine Valve Driver	GR	General Relativity
EVM	Earned Value Management	GRACE	Gravity Recovery and Climate Explorer
EXITE	Energetic X-ray Imaging Telescope Experiment	GREP	Graphite-Reinforced Epoxy
FAD	Formulation Authorization Document	GRO	Compton Gamma Ray Observatory
FDAB	Flight Dynamics Analysis Branch	GS	Ground System
		GSE	Ground Support Equipment
		GSFC	Goddard Space Flight Center
		GUI	Graphical User Interface

H .....	hyperbolic
HAWC . . . . .	High Resolution Airborne Wide-band Camera
H/K.....	house keeping
He .....	Helium
HEAO . . . . .	High Energy Astrophysical Observatory
HEASARC.	High Energy Astrophysics Science Archive Research Center
HEFT . . . . .	High Energy Focusing Telescope
HEO . . . . .	High Earth Orbit
HERO . . . . .	High Energy Replicated Optics
HETE . . . . .	High Energy Transient Experiment
HETG . . . . .	High Energy Transmission Grating
HPB. . . . .	High-Pressure Bridgeman
HPD . . . . .	Half Power Diameter
HQ . . . . .	Headquarters
HST. . . . .	Hubble Space Telescope
HV. . . . .	High Voltage
HXT . . . . .	Hard X-ray Telescope
Hz . . . . .	Hertz
I . . . . .	Iodine
ICESat . . . . .	Ice, Cloud, and Land Elevation Satellite
I/O. . . . .	Input/Output
I&T . . . . .	Integration and Test
ICD . . . . .	Interface Control Document
ID . . . . .	Inner Diameter
I/F . . . . .	Interface
IGM. . . . .	Intergalactic Medium
IIRT. . . . .	Integrated Independent Review Team
IM . . . . .	Instrument Manager
IMAGE . . . . .	Imageer for Magnetopause-to-Aurora Global Exploration
InFOC $\mu$ S. . . . .	International Focusing Optics Collaboration for $\mu$ Crab Sensitivity
IPT . . . . .	Integrated Product Team
IR&D . . . . .	Independent Research and Development
IR. . . . .	Infrared
IRU . . . . .	Inertial Reference Unit
ITAR . . . . .	International Traffic in Arms Regulations
IV&V . . . . .	Independent Verification and Validation
JEXT . . . . .	Joint European X-ray Telescope
JFET . . . . .	Junction Field Effect Transistor
JHU/APL. . . . .	Johns Hopkins University/Applied Physics Laboratory
JPL . . . . .	Jet Propulsion Laboratory
JWST . . . . .	James Webb Space Telescope
K . . . . .	Kelvin
kbps . . . . .	kilobits per second
kByte . . . . .	Kilobyte
keV. . . . .	Kilo electron Volts
kg. . . . .	Kilogram
kHz . . . . .	KiloHertz
KOH . . . . .	Potassium Hydroxide
ksec . . . . .	kilosecond
KSC . . . . .	Kennedy Space Center
LCC . . . . .	Life Cycle Cost
LEO . . . . .	Low Earth Orbit
LL . . . . .	Lincoln Labs
LLNL . . . . .	Lawrence Livermore National Labs
LM . . . . .	Lockheed-Martin
LOA . . . . .	Letter of Agreement
LRF . . . . .	Line Response Function
LRR . . . . .	Launch Readiness Review
LV . . . . .	Launch Vehicle
LV . . . . .	Low Voltage
LVPC . . . . .	Low Voltage Power Converter
LVPS . . . . .	Low Voltage Power Supply
LZP . . . . .	Level Zero Processing
m . . . . .	meter
MHz. . . . .	Megahertz
mm. . . . .	millimeter
ms . . . . .	millisecond
MAP. . . . .	Microwave Anisotropy Probe
MAR . . . . .	Mission Assurance Requirements
MAXIM..	Micro Arcsecond X-ray Imaging Mission
MBE . . . . .	Molecular Beam Epitaxy
MDR . . . . .	Mission Definition Review
MDS . . . . .	Mission Data System
MISC. . . . .	Minimal Instruction Set Computers
MIT . . . . .	Massachusetts Institute of Technology
mK. . . . .	milliKelvin
MLI . . . . .	Multilayer Insulation
Mo . . . . .	Molybednium
MO&DA . . . . .	Mission Operations and Data Analysis

MOC.....	Mission Operations Center
MOR.....	Missions Operation Review
MOU.....	Memorandum of Understanding
MRF .....	Magneto-Rheological Finishing
m/s.....	meters per second
ms .....	millisecond
MSE.....	Mission Systems Engineer
MSFC .....	Marshall Space Flight Center
mT.....	milliTesla
MUX.....	Multiplexer
mW.....	milliWatt
N .....	Neutron
NAR .....	Non-Advocate Review
NAS.....	National Academy of Sciences
NASA .....	National Aeronautics and Space Administration
Nb .....	Niobium
NEAR .....	Near Earth Asteroid Rendezvous
NICMOS .....	Near Infrared Camera and Multi-Object Spectrometer
NIST .....	National Institute of Standards and Technology
nm .....	nanometers
NMP .....	New Millennium Program
NPD .....	NASA Policy Directive
NPG .....	NASA Procedure and Guideline
NRA .....	NASA Research Announcement
NRE .....	Non-recurring Engineering
NSS .....	NASA Safety Standard
NTD .....	Neutron Transmutation Doped
OAB .....	Osservatoria Astronomico Di Brera
OAP.....	Optical Alignment Pathfinder
OB.....	Optical Bench
OBC .....	On-Board Computer
OD .....	Orbit Determination
OD .....	Outside Diameter
ODRM .....	Observation Design Reference Mission
OM .....	Observatory Manager
OM .....	Optics Module
ORR .....	Operations Readiness Review
OS .....	Operating System
OSO-8.....	Orbiting Solar Observatory 8
OSS .....	Office of Space Science
OSSE.....	Oriented Scintillation Spectrometer Experiment
OSSMA ..	Office of Systems Safety and Mission Assurance
P.....	parabolic
PA .....	Power Amplifier
PDR.....	Preliminary Design Review
PER .....	Pre-Environmental Review
PG .....	Procedure Guideline
PHA.....	Pulse Height
PI .....	Principal Investigator
PLF .....	Payload Fairing
PM.....	Project Manager
PMD ....	Propellant Management Device
PMT ....	Photo Multiplier Tube
POP .....	Program Operating Plan
PPL .....	Preferred Parts List
PRICE ...	Parametric Review of Information for Costing and Evaluation
PS.....	Pseudo-Random
PSE .....	Power Supply Electronics
PSF.....	Point Spread Function
psi.....	pounds per square inch
PSI .....	Pressure Systems, Inc.
PSR .....	Pre-Shipment Review
PST .....	Point Source Transmittance
QA.....	Quality Assurance
QE .....	Quantum Efficiency
QPO ....	Quasi-Periodic Oscillations
QSO.....	Quasi-Steller Objects
R .....	Spectral Resolving Power
RA .....	Right Ascension
RAM ....	Random Access Memory
RF .....	Radio Frequency
RFC.....	RGS Focal Plane Camera
RFI.....	Request for Information
RFP .....	Request for Proposals
RGA.....	RGS Grating Array
RGS .....	Reflection Grating Spectrometer
RHESSI ..	Reuven Ramaty High Energy Solar Spectroscopic Imager
RIE.....	Reactive Ion Etch
RMD ....	Reference Mission Description
RMS.....	Root Mean Square
ROCSAT .....	Republic of China Satellite
ROM ....	Rough Order of Magnitude
ROSAT ..	Roentgen-SATellite

ROSS	....Research Opportunities in Space Science
RSDO	....Rapid Spacecraft Development Office
RSS	....Root Sum Square
RT	....real time
RW	....Reaction Wheel
RY	....Real Year
RXTE	....Rossi X-ray Timing Explorer
S.	....Sulfur
SAI	....Swales Aerospace, Incorporated
s/c	....spacecraft
SAFIRE	....Submillimeter and Far Infrared Experiment for SOFIA
SAM	....System Assurance Manager
SAO	....Smithsonian Astrophysical Observatory
SAX	....Satellite per Astronomia X-ray
SBIL	....Scanning Beam Interference Lithography
SCUBA	....Submillimeter Common User Bolometer Array
SDP	....Safety Data Package
SDS	....Science Data System
SE	....Systems Engineer
sec	....second
SEM	....Scanning Electron Microscope
SEU	....Structure and Evolution of the Universe
Si	....Silicon
SI	....Science Instrument
SIS	....Solid-State Imaging Spectrometer
SMA	....Safety and Mission Assurance
Sn	....Tin
SNL	....Space Nanotechnology Laboratory
SNR	....Signal-to-Noise Ratio
SOHO	....Solar and Heliospheric Observatory
SOPHIA	....Stratospheric Observatory For Infrared Astronomy
SQUID	....Superconducting Quantum Interference Device
SR&T	....Supporting Research and Technology
SRC	....Spectroscopy Readout Camera
SRR	....Systems Requirements Review
ST	....Star Tracker
STEP	....Satellite Test of the Equivalence Principle
STEREO	....Solar Terrestrial Relations Observatory
STIS	....Space Telescope Imaging Spectrograph
SWAS	....Submillimeter Wave Astronomy Satellite
SWG	....Science Working Group
SXT	....Spectroscopy X-ray Telescope
Ta	....Tantalum
TB	....Thermal Balance
TBD	....To Be Determined
TBR	....To Be Resolved
TDRSS	....Tracking and Data Relay Satellite System
Tbyte	....Terrabyte
TCP/IP	... Transmission Control Protocol/Internet Protocol
Te	....Tellurium
TES	....Transition Edge Sensor
TES	....Tropospheric Emission Spectrometer
Ti	....Titanium
TLM	....telemetry
TLRD	....Top-Level Requirements Document
TM	....Telescope Module
TOO	....Target of Opportunity
TPF	....Terrestrial Planet Finder
TRACE	... Transition Region Coronal Explorer
TRIP	....Technology Readiness and Implementation Plan
TRL	....Technology Readiness Level
TRMM	.. Tropical Rainfall Measuring Mission
TST	....Technical Support Team
TT&C	... Tracking, Telemetry and Command
TV	....Thermal Vacuum
USO	....Ultra Stable Oscillator
UTC	....Universal Time Code
UV	....Ultraviolet
UW	....University of Wisconsin
V	....Velocity
V&V	....Verification and Validation
VPSBIL	.. Variable Period SBIL

W.....Watt  
WBS ....Work Breakdown Structure  
WIRE ....Wide-field Infrared Explorer  
VLSI ....Very Large Scale Integration  
XEUS....X-ray Evolving Universe Spectroscopy Mission  
XIS.....X-ray Imaging Spectrometer  
XMM.....X-ray Multi-Mirror Mission  
XMS ..... X-ray Microcalorimeter Spectrometer  
XO.....Crystal Oscillator  
XQC ....X-ray Quantum Calorimeter  
XRCF ....X-ray Calibration Facility  
XRB.....X-ray Binaries  
XRS .....X-ray Spectrometer  
XTE.....Rossi X-ray Timing Explorer  
z.....red shift  
Zn .....Zinc  
ZOC ....Zero Order Camera  
 $\mu$ m .....micrometer